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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,644	12/29/2003	Guy Pardon	FREI.P048DV	1643

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EXAMINER	
LOVEL, KIMBERLY M	
ART UNIT	**PAPER NUMBER**
2167	

DATE MAILED: 10/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)
	10/707,644	PARDON ET AL.
	Examiner	**Art Unit**
	Kimberly Lovel	2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *6-18,20 and 23-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *6-18,20 and 23-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is responsive to the Amendment filed 18 July 2006.

2. Claims 6-18, 20 and 23-37 are pending in this application. Claims 6, 8, 10, 11, 12, 15, 18 and 23 are independent. In the Amendment filed 18 July 2006, claims 19 and 21-22 have been cancelled and claims 6, 8, 12, 18, 20 and 35 have been amended. This action is made Non-Final.

3. The rejections of claims 6-37 as being anticipated by US Patent No 6,233,585 to Gupta et al have been withdrawn as necessitated by the amendment.

Specification

4. The objection to the abstract is withdrawn as necessitated by the amendment.

Claim Rejections - 35 USC § 101

5. The rejections of claims 6-9, 12-14 and 18-37 under 35 U.S.C. 101 are withdrawn as necessitated by the amendment.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 6, 8, 10, 11, 12 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by the article "Transaction Scheduling in Dynamic Composite Multidatabase Systems" to Bradshaw et al (hereafter Bradshaw et al).

Referring to claim 6, Bradshaw et al disclose a data management system, said system characterized as a composite system comprising at least one processor (see abstract), the system comprising

a plurality of processes [multidatabase servers run as separate processes or as a separate group of processes] (see section 3: Composite Multidatabase Model, lines 10-16);

each process having an interface and implementing at least one respective service defined by that interface (see section 3: Composite Multidatabase Model, lines 1-7);

a first invocation of the at least one respective service by a transaction resulting in the creation of a first transaction local to the process thereof, the first local transaction being a child of the invoking transaction [Tk] and being parent [Tk1-q] of any transaction triggered by invocation of a service of another process (see section 3: Composite Multidatabase Model, lines 86-90);

a second invocation of the at least one respective service by a transaction resulting in the creation of a second transaction local to the process thereof, the second local transaction being a child [Tk] of the invoking transaction and being parent [Tk1-q] of any transaction triggered by invocation of a service of another process (see section 3: Composite Multidatabase Model, lines 86-90);

each process characterized in that if the first transaction and the second transaction conflict but are both children of a same invoking transaction, then the first transaction and the second transaction are not executed concurrently [one transaction must commit or abort before the other transaction executes] (see section 5.1: Composite Rigorous Scheduling Algorithm, lines 4-9);

each process further characterized in that each transaction local thereto is independently handled at the process [M2 handles Tk] (see section 3: Composite Multidatabase Model, lines 86-90);

each process making scheduling and recovery decisions independent of any centralized component (see section 5: Scheduling Transactions in Composite Multidatabase systems, lines 18-20 – each component keeps rigorous histories).

Referring to claim 8, Bradshaw et al disclose a data management system, said system characterized as a composite system comprising at least one processor (see abstract), the system comprising

a plurality of processes [multidatabase servers run as separate processes or as a separate group of processes] (see section 3: Composite Multidatabase Model, lines 10-16);

each process having an interface and implementing at least one respective service defined by that interface (see section 3: Composite Multidatabase Model, lines 1-7);

invocation of the at least one respective service by a thread of the invoking transaction and being parent of any transaction triggered by invocation of a service of another process (see section 3: Composite Multidatabase Model, lines 86-90);

each process further characterized in that each transaction local thereto is independently handled at the process (see section 3: Composite Multidatabase Model, lines 86-90);

each process making scheduling and recovery decisions independent of any centralized component triggered by invocation of a service of another process, each process further characterized in that each transaction local thereto is independently handled at the process, each process making scheduling and recovery decisions independent of any centralized component (see section 5: Scheduling Transactions in Composite Multidatabase systems, lines 18-20 – each component keeps a rigorous history),the method comprising the steps of:

propagating from a first process to a second process a message indicative of a globalCommit operation with respect to a root transaction, said message also indicative of a number or identifying list of invocations which the first process has made to the second process on behalf of the root transaction (see section 2: Related Work, column 3);

within the second process, comparing the number or list indicated in the message with a count or list within the second process of the number or list of invocations which have been made on behalf of the root transaction (see section 2: Related work, column 3);

in the event the comparison yields a non-match, aborting the transaction [if orders are not consistent then the transaction aborts] (see section 2: Related Work, lines 15-17).

Referring to claim 10, Bradshaw et al disclose a method for use with a data management system, said system characterized as a composite system (see abstract), the system comprising a plurality of processes, each process having an interface and implementing at least one respective service defined by that interface, invocation of the at least one respective service by a transaction resulting in the creation of a transaction local to the process thereof, the local transaction being a child of the invoking transaction and being parent of any transaction triggered by invocation of a service of another process, each process further characterized in that each transaction local thereto is independently handled at the process, each process making scheduling and recovery decisions independent of any centralized component (see abstract), the method comprising the steps of:

propagating from a first process to a second process a message indicative of a globalCommit operation with respect to a root transaction, said message also indicative of a number or list of invocations [multicellular commit order list] which the first process has made to the second process on behalf of the root transaction (see section 5.2: Composite Timestamp Ordering Algorithm);

within the second process, comparing the number or list indicated in the message with a count or list within the second process of the number or list of

invocations which have been made on behalf of the root transaction (see section 5.2: Composite Timestamp Ordering Algorithm);

in the event the comparison yields a match, proceeding with the globalCommit operation [receives the commit] (see section 5.2: Composite Timestamp Ordering Algorithm);

Referring to claim 11, Bradshaw et al disclose a method for use with a data management system, said system characterized as a composite system (see abstract), the system comprising a plurality of processes, each process having an interface and implementing at least one respective service defined by that interface, invocation of the at least one respective service by a transaction resulting in the creation of a transaction local to the process thereof, the local transaction being a child of the invoking transaction and being parent of any transaction triggered by invocation of a service of another process, each process further characterized in that each transaction local thereto is independently handled at the process, each process making scheduling and recovery decisions independent of any centralized component (see abstract), the method comprising the steps of:

propagating from a first process to a second process a message indicative of a globalCommit operation with respect to a root transaction, said message also indicative of a number or list of invocations [multicellular commit order list] which the first process has made to the second process on behalf of the root transaction (see section 5.2: Composite Timestamp Ordering Algorithm);

within the second process, comparing the number or list indicated in the message with a count or list within the second process of the number or list of invocations which have been made on behalf of the root transaction (see section 5.2: Composite Timestamp Ordering Algorithm);

in the event the comparison yields a non-match, aborting the transaction [if the orders do not match then they are aborted] (see section 2: lines 15-17 and section 5.2: Composite Timestamp Ordering Algorithm);

Referring to claim 12, Gupta et al disclose a distributed system, said system characterized as a composite system comprising at least one processor (see abstract), the system comprising

a plurality of processes [multidatabase servers run as separate processes or as a separate group of processes] (see section 3: Composite Multidatabase Model, lines 10-16);

each process having an interface and implementing at least one respective service defined by that interface (see section 3: Composite Multidatabase Model, lines 1-7);

each or any globalCommit message exchange between processes also carrying information about the actual work being committed [the globalCommit is tagged with a timestamp] (see section 5.2: Composite Timestamp Ordering Algorithm, lines 27-30).

Referring to claim 15, Gupta et al disclose a method for use in a distributed system, said system characterized as a composite system, the system comprising a plurality of processes, each process having an interface and implementing at least one

respective service defined by that interface (see abstract), the method comprising the step of:

for each globalCommit message exchanged between processes, including also information about the actual work being committed [the globalCommit is tagged with a timestamp] (see section 5.2: Composite Timestamp Ordering Algorithm, lines 27-30).

8. Claims 7, 9, 13, 14, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the article "Transaction Scheduling in Dynamic Composite Multidatabase Systems" to Bradshaw et al (hereafter Bradshaw et al) as applied respectively to claims 6, 8, 12 and 15 above, and further in view of US Patent No 6,233,585 to Gupta et al (hereafter Gupta et al).

Referring to claim 7, Bradshaw et al disclose a root transaction. However, Bradshaw et al fail to explicitly disclose the further limitation wherein the root transaction is able to dynamically set concurrency preferences for the resulting distributed transaction, based on client needs. Gupta et al discloses a transaction system (see abstract), including the further limitation wherein the root transaction is able to dynamically set concurrency preferences for the resulting distributed transaction, based on client needs (see column 5, line 61 – column 6, line 3 – the isolation level selected is considered to represent the concurrency preference) in order to provide improved customization.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the feature of dynamically setting concurrency preferences with the system of Bradshaw et al. One would have been motivated to do so in order to provide improved customization.

Referring to claim 9, Bradshaw et al disclose a root transaction. However, Bradshaw et al fails to explicitly disclose the further limitation wherein each process is built using Java. Gupta et al discloses a transaction system (see abstract), including the further limitation wherein each process is built using Java (see column 13, lines 1-6) so since Java is a commonly used language.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the feature of each process being built using Java as disclosed by with the root transaction of Bradshaw et al. One would have been motivated to do so since Java is a commonly used language.

Referring to claim 13, Gupta et al disclose the system of claim 12, such information being logged for recoverability in the event of a crash, such information being used for assistance at any time before, during or after global commitment (see column 11, lines 12-21).

Referring to claim 14, the combination of Bradshaw et al and Gupta et al (hereafter Bradshaw/Gupta) discloses the system of claim 12 or 13, wherein any globalCommit requires a registration, and wherein the registration for a globalCommit also carries information about the actual work being committed (Gupta et al: see column 11, lines 12-21).

Referring to claim 16, Bradshaw et al disclose a composite system. However, Bradshaw et al fail to explicitly disclose the further step of logging such information for recoverability in the event of a crash, such information being used for assistance at any time before, during or after global commitment. Gupta et al discloses a transaction system (see abstract), including the further step of logging such information for recoverability in the event of a crash, such information being used for assistance at any time before, during or after global commitment (see column 11, lines 12-21) in order to improve recoverability of the information.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the feature of logging information as disclosed by with the system of Bradshaw et al. One would have been motivated to do so in order to improve recoverability of the information.

Referring to claim 17, Bradshaw/Gupta discloses the method of claim 15 or 16 further comprising the step of propagating a registration for a globalCommit, wherein the registration for a globalCommit also carries information about the actual work being committed (Gupta et al: see column 11, lines 12-21).

9. Claims 18, 20 and 23-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over the article "Transaction Scheduling in Dynamic Composite Multidatabase Systems" to Bradshaw et al in view of US Patent No 6,233,585 to Gupta et al.

Referring to claim 18, Bradshaw et al disclose a distributed system, said system characterized as a composite system (see abstract), the system comprising

a plurality of processes [multidatabase servers run as separate processes or as a separate group of processes] (see section 3: Composite Multidatabase Model, lines 10-16);

each process having an interface and implementing at least one respective service defined by that interface (see section 3: Composite Multidatabase Model, lines 1-7);

However, Bradshaw et al fail to explicitly disclose the further limitations of the root invocations. Gupta et al discloses a transaction system (see abstract), including the further limitations wherein the root invocation or, alternatively, the root's human user is allowed to dynamically set its/his concurrency preferences for the entire invocation (see column 12, lines 30-32); wherein the root invocation [transaction] propagates the concurrency preferences with each or any child invocation it makes (see column 12, lines 46-50) in order to provide improved customization; wherein the propagated concurrency preferences at any level in the root invocation's invocation hierarchy specify the extent to which shared resource access is desired or allowed or denied

among descendant invocations of the root invocation or user and other, concurrent invocations who are also descendants of the same root (see column 12, lines 46-50).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the features of the root transactions with the system of Bradshaw et al. One would have been motivated to do so in order to provide improved customization.

Referring to claim 20, Gupta et al disclose the system of claim 19 wherein each invocation propagates the concurrency preferences as it has received them from the root invocation (see column 12, lines 46-50).

Referring to claim 23, Bradshaw et al disclose a data management system, referred to as service, comprising:

One or more operations that can be invoked by remote clients [multidatabase servers run as separate processes or as a separate group of processes] (see section 3: Composite Multidatabase Model, lines 10-16);

Some or all such remote clients having one or more associated contexts or transaction contexts (see Fig 2).

However, Bradshaw et al fail to explicitly disclose the further limitations. Gupta et al discloses a transaction system (see abstract), including the further limitations of an invocation by a remote client also containing partial or complete information indicating or containing said client's context or contexts (see column 8, lines 10-51); an invocation, by a remote client, of an operation leading to a new transaction different from, but possibly related to, any existing client transaction (see column 5, lines 16-19); such an operation-level transaction being committed before the client context is terminated

before globalCommit notification (see column 12, lines 28-57); the service maintaining an undo operation for such a committed operation (see column 6, lines 12-20); a failing or failed remote client context leading to the execution of the undo operations of the corresponding committed invocations in the service (see column 7, lines 42-46) in order to provide recoverability.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the feature of undo operations as disclosed by Gupta et al with the management system of Bradshaw et al.. One would have been motivated to do so in order to provide recoverability.

Referring to claim 24, Bradshaw/Gupta discloses the system of claim 23 where some or all undo operations are executed in an order that is the reverse of the order of their original counterparts (Gupta et al: see column 9, line 66 – column 10, line 2 – rollback is considered to represent undo; first-in-last-out is considered to represent reverse order).

Referring to claim 25, Bradshaw/Gupta discloses the system of claim 23 where in addition the undo operations are chosen or defined in the same system as the one where the corresponding normal operations were executed (Gupta et al: see column 12, lines 46-56).

Referring to claim 26, Bradshaw/Gupta discloses the system of claim 23 where some or all undo operations are unknown to a remote client or its context (Gupta et al: see column 12, lines 11-12).

Referring to claim 27, Bradshaw/Gupta discloses the system of claim 23 where some or all undo operations are executed after a timeout and independent of whether the client's context outcome requires such undo (Gupta et al: see column 12, lines 11-12).

Referring to claim 28, Bradshaw/Gupta discloses the system of claim 23 where an undo operation's effects are confined to the data managed by the service on which the undo operation is maintained, even if the original operation involved other services (Gupta et al: see column 12, lines 45-56).

Referring to claim 29, Bradshaw/Gupta discloses the system of claim 23 where the service keeps locks to ensure that undo operations can be executed correctly (Gupta et al: see column 9, lines 19-21).

Referring to claim 30, Bradshaw/Gupta discloses the system of claim 23 where client context-related information is also part of any global commit message exchanges (Gupta et al: see column 10, lines 4-7).

Referring to claim 31, Bradshaw/Gupta discloses the system of claim 23 where client context information includes application-specific data (Gupta et al: see column 10, lines 4-7 – the context relates to the transaction which is considered to be application-specific).

Referring to claim 32, Bradshaw/Gupta discloses system of claim 31 where all or part of the context information is logged, i.e. stored on persistent storage, and retrievable by a human. Administrator (Gupta et al: see column 8, lines 11-14).

Referring to claim 33, Bradshaw/Gupta discloses system of claim 23 where the service accepts messages indicative of which previously committed operations have to be undone (Gupta et al: see column 11, lines 1-7).

Referring to claim 34, Bradshaw/Gupta discloses system of claim 23 where the service accepts messages indicative of which previously committed operations do not have to be undone (Gupta et al: see column 11, lines 1-7).

Referring to claim 35, Bradshaw/Gupta discloses the system of claim 23 where some or all invocations are message-based or asynchronous (Gupta et al: see column 3, lines 1-4).

Referring to claim 36, Bradshaw/Gupta discloses system of claim 23 where some or all invocations are synchronous (Gupta et al: see column 3, lines 1-4).

Referring to claim 37, Bradshaw/Gupta discloses system of claim 23 where the client can request the undo executions of its invocations at the service while still allowing globalCommit in the end (Gupta et al: see column 12, lines 28-56).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly Lovel whose telephone number is (571) 272-2750. The examiner can normally be reached on 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kimberly Lovel
Examiner
Art Unit 2167

1 October 2006
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2 October 2006